©Crown copyright • www.metoffice.gov.uk

# Met Office advances severe weather forecasting

16 June 2008

The Met Office has today announced significant developments in its science and technology capability to provide more precise pinpointing of where and when extreme rainfall will occur, helping to strengthen the UK's resilience to major severe weather events.

The latest advances mean that severe rainfall forecasts will now be available a further day in advance and the location of individual storms will be forecast with greater geographical precision than previously.

Much of the estimated £3 billion insurance cost from last summer's floods was caused by surface water flooding resulting directly from unusually intense rainfall on already saturated ground and urban surfaces.

Sir Michael Pitt's interim report into the summer floods published in December acknowledged the accuracy of the Met Office severe weather warnings issued last summer. And it called for feasibility studies into the types of forecasting developments announced today. His final report, published later this month will propose further recommendations to improve the UK's ability to anticipate and respond to major flooding events.

The Met Office is also assembling a team of specialist forecasters who will access the latest technology to provide early warning and risk assessment to those involved in flood forecasting as well as emergency responders and operators of critical national infrastructure.

Paul Davies, Met Office extreme rainfall service manager said: "The weather forecasts and alerts to emergency responders issued last summer were both accurate and timely. But the intensity and impact of the rain that fell - including extensive surface water flooding in cities like Sheffield – was wholly unprecedented.

"The events of last summer have focused the attention of all agencies involved in severe weather and flood forecasting and the Met Office has accelerated the delivery of its science and technology capabilities in order to meet the challenges ahead."

The Met Office continues to work closely with partner agencies such the Environment Agency, Ordnance Survey and the Centre for Ecology and Hydrology to develop improved alert systems making the best possible use of collective expertise. Any decision on long term revisions to the current system will be made by the Government once Sir Michael Pitt has outlined his recommendations.

Water UK chief executive Pamela Taylor said: "Water UK welcomes the advances by the Met Office in forecasting extreme rainfall events. Such events can have a significant impact on the water industry and its customers through the overwhelming of drains and sewers and loss of essential services.

"The industry has close links with the Met Office through its on-going review of the lessons learned last summer and will be working to ensure that a partnership approach delivers the most effective use of information and data."

## Technical developments announced today

**Short Term Ensemble Prediction System (STEPS)** Modelling radar data to provide predictions of surface rainfall enabling the location of extreme rainfall to be pinpointed in several hours before it occurs.

**Met Office Global and Regional Ensemble Prediction System (MOGREPS)**
Creating multiple forecasts up to two days ahead to quantify uncertainty. It enables the issue of earlier and more reliable warnings of extreme events.

**Storm Scale model**
A computer model that allows the evolution of convective rainstorms to be forecast. New methods of assessing the risk of extreme rainfall from these forecasts have been developed, which will enable more precise forecasting of rainfall intensity and location.

## What is surface water flooding?

Flooding originating directly from rainfall. Unlike river flooding, it occurs before the water enters a river or watercourse, or where no river or watercourse exists. It typically occurs quickly after rain has fallen, making warning very difficult.

Surface water flooding often occurs in urbanised areas when rainfall intensities are so high that the water cannot be adequately conveyed by the drainage system.

**Notes:**

In March 2008 the Met Office announced a new traffic light system for warnings issued by its Public Weather Service (PWS) to better inform emergency services of potential disruption associated with severe weather.

The combined June and July 2007 rainfall totals for England and Wales were the largest since records began in 1766.

The Met Office is responsible for issuing severe weather warnings while the Environment agency is responsible for issuing flood alerts for rivers and coastal areas in England and Wales. The two organisations are currently developing a pilot service to forecast and assess the impact of extreme rainfall.